CLAIMS:

1. A medical monitoring system for the detection of at least one disorder in a human patient, comprising:

an auditory response testing subsystem, said auditory response testing subsystem configured to measure at least one response of the human patient to an auditory stimulus, said response representative of a first indicator of the at least one disorder;

at least one non-auditory response testing subsystem, said at least one non-auditory response testing subsystem configured to measure at least one characteristic of the human patient, said at least one characteristic representative of at least one additional indicator of the at least one disorder; and

a processor system operatively coupled to each of said testing subsystems, said processor system configured with a computer program to selectively operate each of said testing subsystems and to generate a cumulative index representative of the at least one disorder responsive to a plurality of indicators of the at least one disorder.

2. The medical monitoring system of Claim 1 wherein said at least one non-auditory response testing subsystem includes a breath gas monitoring subsystem.

3. The medical monitoring system of Claim 2 wherein said breath gas monitoring subsystem is configured to measure at least a concentration of carbon monoxide exhalations from the human patient,

said carbon monoxide concentration an indicator of a hemolysis condition.

4. The medical monitoring system of Claim 2 wherein said breath gas monitoring subsystem is configured to measure a concentration of a breath gas exhalations from the human patient selected from a set of breath gases including oxygen, carbon dioxide, nitrous oxide, and NO_2.

5. The medical monitoring system of Claim 1 wherein said at least one non-auditory response testing subsystem includes a blood analysis subsystem.

6. The medical monitoring system of Claim 5 wherein said blood analysis subsystem is configured to measure at least a presence or absence of at least one chemical compound indicative of a hemolysis condition in a human patient.

7. The medical monitoring system of Claim 6 wherein said blood analysis subsystem is further configured for non-invasive optical blood analysis.

8. The medical monitoring system of Claim 5 wherein said blood analysis subsystem is configured to measure at least a presence or absence of at least one chemical compound indicative of a lactose malabsorption condition in a human patient.

9. The medical monitoring system of Claim 1 further including a portable hand-held enclosure, said processor system, said auditory

response testing subsystem, and said at least one non-auditory response testing subsystem disposed within said enclosure;

at least a first connection point on said enclosure for operatively coupling at least a first instrument to said auditory response testing subsystem;

at least a second connection point on said enclosure for operatively coupling at least a second instrument to said at least one non-auditory response testing subsystem; and

a power supply for operating each of said testing subsystems.

10. The medical monitoring system of Claim 9 wherein said first and second instruments are selected from a set of instruments including microphones, acoustic emitters, electrodes, gas analyzers, and optical sensors.

11. The medical monitoring system of Claim 1 wherein said at least one non-auditory response testing subsystem includes a bioelectric signal measurement subsystem, said bioelectric signal measurement subsystem configured to measure at least one bioelectric signal from a patient.

12. The medical monitoring system of Claim 11 wherein said processor system is further configured to evaluate said bioelectric signal to detect at least one predetermined anomaly representative of a medical disorder in a patient.

13. The medical monitoring system of Claim 11 wherein said measured bioelectric signal is selected from a set of bioelectric signals including electro-encephalogram signals and electro-cardiogram signals.

14. The medical monitoring system of Claim 1 wherein said processor system is further configured to selectively display test results from a single testing subsystem.

15. The medical monitoring system of Claim 1 wherein said processor system is further configured to selectively display a cumulative index generated from measurements acquired by a plurality of testing subsystems, said cumulative index representative of a medical condition of said human patient.

16. An medical monitoring system for the detection of at least one medical disorder in a human patient, comprising:

a portable hand-held enclosure;

a plurality of testing subsystems disposed within said enclosure, each of said plurality of testing subsystems configured to measure at least one discrete characteristic of the human patient, each of said discrete characteristics representative of the at least one disorder;

at least one connection points on said enclosure for operatively coupling at least one instrument to said plurality of testing subsystems; and

a power supply for operating said plurality of testing systems.

17. The medical monitoring system of Claim 16 wherein said plurality of testing subsystems are selected from a set of testing

subsystems including an auditory screening subsystem; a breath gas analyzer subsystem; a blood analysis subsystem; and a bioelectric signal measurement subsystem.

18. The medical monitoring system of Claim 17 wherein said blood analysis subsystem is a non-invasive optical blood analysis subsystem.

19. The medical monitoring system of Claim 16 wherein said at least one instrument is selected from a set of instruments including microphones, acoustic emitters, electrodes, gas collectors, and optical sensors.

20. The medical monitoring system of Claim 16 further including a processor system housed within said enclosure, said processor system having with a computer program configured to selectively operate said plurality of testing subsystems, and to provide results to said user.

21. The medical monitoring system of Claim 20 further including a display device mounted to said enclosure, said display device operatively connected to said processor system to display said results.

22. The medical monitoring system of Claim 20 wherein said computer program is configured to utilize results from at least two of said testing subsystems to generate a cumulative index value representative of the at least one medical disorder in the human patient.

23. The medical monitoring system of Claim 16 wherein the at least one medical disorder is selected from a set of medical disorders including hemolysis, lactose malabsorption, and hyperbilirubinemia.

24. A self-contained, portable medical monitoring system for the detection of at least one medical disorder in a human patient, comprising:

a plurality of detection means for acquiring a plurality of different measurements of patient characteristics representative of the at least one disorder; and

a processor means, coupled to said plurality of detection means, said processor means configured for evaluating said plurality of different measurements, and for generating a index based on said plurality of different measurements, said index representative of the presence of the at least one disorder.

25. The self-contained, portable medical monitoring system of Claim 24 wherein said processor means is further configured to display at least one of said plurality of different measurements individually to a user.